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EVALUATING THE ECONOMIC BURDEN AND HEALTH CARE UTILIZATIONS OF U. S. VETERAN PATIENTS DIAGNOSED WITH CHRONIC HEPATITIS C

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OBJECTIVES: Examine the economic burden and health care utilizations of the chronic hepatitis C (CHC) in the U. S. veteran population. **METHODS:** A retrospective database analysis was performed using the U. S. Veterans Health Administration Medical SAS datasets (01OCT2007-30SEP2012). Patients diagnosed with CHC (International Classification of Disease 9thRevision Clinical Modification [ICD-9-CM] codes 070.44, 070.54, 070.70, 070.71) were identified, and the first diagnosis date served as the index date. A comparator group was created by identifying patients without a CHC diagnosis but of the same age, region, gender and index year, and matched according to baseline Charlson Comorbidity Index scores. The index date for the comparator group was randomly chosen to reduce selection bias. A 1-year continuous enrollment period pre- and post-index date was required for both groups. One-to-one propensity score matching (PSM) was used to compare health care costs and utilizations during the follow-up period between the cohorts, adjusting for baseline demographic and clinical characteristics. **RESULTS:** Eligible patients (N=87,837) were identified for the CHC and comparison cohorts. After applying 1:1 PSM, a total of 69,809 patients were matched from each group and baseline characteristics were well-balanced. CHC patients were more likely to be hospitalized (33.47% vs. 2.42%, p<0.0001) and had more emergency room (ER) (28.55% vs. 6.68%, p<0.0001), physician office (98.65% vs. 53.56%, p<0.0001), outpatient (98.81% vs. 54.46%, p<0.0001) and pharmacy visits (88.73% vs. 57.18%, p<0.0001), resulting in higher health care costs for inpatient ($11,303 vs. $691, p<0.0001), ER ($345 vs. $60, p<0.0001), outpatient ($5,540 vs. $1,382, p<0.0001), physician office ($4,956 vs. $1,230, p<0.0001), pharmacy ($947 vs. $433, p<0.0001) and total costs ($17,789 vs. $2,506, p<0.0001) for CHC patients, relative to comparison patients. **CONCLUSIONS:** U.S. veterans diagnosed with CHC were more likely to have higher health care resource utilization and were associated with a higher economic burden compared to matched controls.

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HOSPITALIZATION COSTS FOR COMMUNITY-ACQUIRED PNEUMONIA IN ELDERLY IN THE NETHERLANDS

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OBJECTIVES: To accurately estimate hospitalization costs of Community-Acquired Pneumonia (CAP) in elderly in the Netherlands. **METHODS:** This observational study was part of the CAPiTA-trial [1] and was conducted in 54 hospitals in the Netherlands between October 2008 and August 2013. CAPiTA participants with a suspicion of CAP were included. CAP was diagnosed on clinical and radiographic criteria according to the CAPiTA protocol. A re-admission within 30 days was considered as one episode. Data on health care use were collected prospectively using clinical files. Hospitalization costs were stratified by age-group (65-74, 75-84 and ≥85) and risk categories based on comorbidities (high (i.e. immunocompromised patients), medium (i.e. presence of other chronic conditions) and low). Costs are presented for the year 2012. **RESULTS:** 3,141 suspected CAP episodes were included. 1,835 confirmed CAP episodes (58.4%) were reported of which 124 cases were readmissions (6.8%). The first admission resulted in an overall mean length of hospital stay of 10.94 (SD ±9) days, in-hospital mortality rate of 10.7%, and average costs of €7,219 (95% CI [€6,653, €7,833]). General ward nursing cost accounted for 67.4% of all costs and ICU nursing for 27.8%. For the age-categories 65-74, 75-84 and ≥85 mean length of hospital stay was respectively 11.23,10.86 and 10.56 days (p=0.534), fatality rate was 7,8%, 10,6%, and 15,5% (p=0,001) and mean hospitalization costs were €7,985, €7,240, €5,774 (p=0.041). When stratified by risk, the highest risk group showed the lowest mean costs (€6,551, p=0.019) and the highest mortality (21%). **CONCLUSIONS:** Health care costs decline with age and risk severity. The eldest age group experienced shorter ICU admissions and high mortality. Patients with medium and high risk for developing CAP showed a higher mortality rate and lower costs. 1. Hak, E., et al., Neth J Med, 2008.**66** (9): p. 378-83.

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COST ESTIMATION OF HIV INFECTION IN GREECE: DATA FROM AN INFECTIOUS DISEASES UNIT

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OBJECTIVES: HIV-infection nowadays represents a chronic disease of high complexity affecting populations worldwide. Highly active antiretroviral therapy, where available, has resulted in prolonged life expectancy and increased quality of life, through an ever-increasing cost of HIV-infection. The present study aimed at estimating the health resources consumed by HIV-infected patients and their respective direct costs, on an annual basis, in Greece. **METHODS:** A retrospective study was performed in order to collect data from the medical records of 447 HIV-infected patients, followed in an Infectious Diseases Unit in Athens. The survey included all services and antiretroviral treatment that patients received in one year as well as their demographic data. The subjects of the study were stratified in three health states according to the CD4+ counts, as defined by the CDC classification system for HIV infection. The cost analysis evaluating the direct cost of HIV-infection was undertaken from a third-party payer perspective. **RESULTS:** The annual direct cost was calculated at 6,860.3€/patient, the largest part being attributed to antiretroviral therapy (5,741.8€, p=NS). The respective cost for providing health care services was estimated at 1,118.5€, with laboratory tests representing 13.5% of total cost (P<0.05), while hospitalization and outpatient visits accounted for 2.3% (p<0.05) and 0.5% (p=NS) respectively. Overall, direct cost/patient increased for lower CD4+ counts, being associated with a rise in the average of laboratory tests and more hospitalizations. Direct cost for patients ranged from 6,066.8€ (>500 cells/mL) to 7,654.3€ (<200 cells/mL). **CONCLUSIONS:** The total direct cost of HIV-infection seems to increase with advanced disease. Considering the reduction of available resources, especially in a country such as Greece, where austerity measures take place, effective disease management represents a major challenge, and the improvement of health services provided to HIV patients is more than compelling.

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BURDEN OF DISEASE CAUSED BY INFLUENZA IN GERMANY - A RETROSPECTIVE CLAIMS DATABASE ANALYSIS

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OBJECTIVES: Seasonal influenza occurs in annual epidemics usually peaking during winter. The seasonal influenza virus can cause mild to severe illness and poses a burden for patients of all age groups. The objective of this study is to assess the disease burden and vaccination-rates based on claims data in different age groups for the influenza season 2012/2013 in Germany. **METHODS:** We conducted a retrospective claims data analysis using the Health Risk Institute research database, containing anonymized data of 3,953,260 individuals (appr. 4.9% of the German population). The study period comprised 1 October 2012 to 30 June 2013, patients were identified based on the ICD-10-GM codes for influenza. Vaccine-rates were calculated by identifying documented vaccinations. The disease burden was assessed based on occurring secondary diseases and health services utilization in the inpatient and outpatient sector. The relative frequency of the most common concomitant diseases (otitis media, pneumonia) was evaluated and compared to individuals not infected with influenza. Results were compared and validated against existing evidence. **RESULTS:** We observed 65,826 patients with a documented influenza during the influenza season 2012/2013. The occurrence of otitis media and pneumonia was higher in all age groups compared to the non-influenza-infected population and especially high in children. A total of 848 influenza-related hospitalizations were identified with a mean duration of 6 days, amounting to €4,945,686 and 8,532 days of inpatient care. Overall, 65% of these hospitalizations were caused by influenza (principal diagnosis), and even over 80% for patients aged 2-17 years. Moreover, total outpatient costs amounted to €14,947,976. Finally, vaccination-rates were below 4% for children and 37% for patients aged > 60. **CONCLUSIONS:** Seasonal influenza can cause severe outcomes leading to hospitalizations and excess costs. Especially influenza-infected children are affected by concomitant diseases resulting in a higher disease burden. Furthermore, documented vaccination-rates are quite low.

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DIRECT AND INDIRECT COST OF HCV-RELATED DISEASES IN ITALY: AN INCIDENCE-BASED PROBABILISTIC APPROACH

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OBJECTIVES: The hepatitis C virus (HCV) induces several pathological conditions worldwide with a substantial medical and economic burden. The objective of this study is to estimate the average annual cost incurred by the National Health Service (NHS) as well as society due to HCV in Italy. **METHODS:** A probabilistic incidence-based cost of illness model was developed to estimate an aggregate measure of the economic burden associated with HCV-related diseases either in terms of direct or indirect costs (impact of absenteeism computed according to the human capital method). A systematic literature review was carried out to reveal both epidemiological and economic data. Furthermore, a one-way probabilistic sensitivity analysis with 5,000 Monte Carlo simulations was performed, in order to test the robustness of results and define the proper 95%CI. **RESULTS:** Overall, the total economic burden associated with HCV-related diseases was estimated in € 1,05 (95%CI: € 0,61-€ 1,61) billion. A percentage equal to 61,4% were associated with indirect costs (95% CI: € 0,37-€ 0,99 billion) and 38,6% with direct costs (95% CI: € 0,23-€ 0,63 billion). For chronic hepatitis C, cirrhosis, hepatocellular carcinoma (HCC), liver transplantation and death from causes related to HCV was estimated an average annual economic burden amounting to € 0,26 (95%CI: € 0,14-€ 0,41), € 0,55 (95%CI: € 0,30-€ 0,87), € 0,051 (95%CI: € 0,0001-€ 0,25) € 0,05 (95%CI: € 0,03-€ 0,08) and € 0,15 (95%CI: € 0,06-€ 0,27) billion, respectively. **CONCLUSIONS:** Italy is one of the European countries with the highest number of people with chronic HCV infection, the leading cause of cirrhosis, HCC and liver-related death. HCV-related diseases causes a significant cost for Italian NHS, especially for each case of liver transplantation. These highly debilitating and life-threatening complications generate a rather large amount of indirect costs for the Italian society as well.

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COST OF INFLUENZA AND ACUTE RESPIRATORY INFECTIONS TREATMENT IN UKRAINE

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OBJECTIVES: During the influenza epidemic period (2009-2010) 17 % of Ukrainian population were sick. The aim was to assess the dynamics of incidence rates. We analyzed the costs of treating influenza and acute respiratory infections (ARI) in the four stages of medical care: 1 - primary care (PCP), 2-out-patient, 3-hospital, 4-intensive care unit during the period 2009-2010 (pandemic) vs 2010-2011. **METHODS:** We used the statistic data of the MoH of Ukraine, the incidence of influenza and ARI, and method "cost of illness" per 1 patient. **RESULTS:** In 2009-2010 influenza rate and ARI was 472,6 per 100000 population. The vaccination coverage was 239,104 people, that representing 0.518% of the total population. In 2010-2011 the ifluenza rate and ARI was 420.9 per 100000, respectively. The vaccination coverage was 602911 persons during 2010-2011 years, that's 1,312% of the total population. We obtained the following costs